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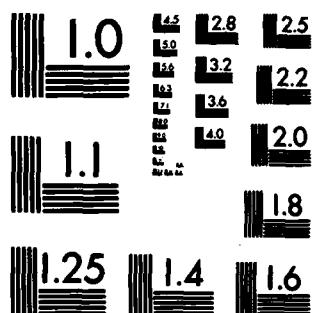   GRADUATE SCHOOL OF INDUSTR.. P S GOODMAN ET AL. 1982
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Studies of Change
in Organizations:
A Status Report

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Paul S. Goodman
Lance B. Kurke

This book is a collection of essays on change. Its purpose is to
sharpen our conceptualizations of change. The audience is anyone
concerned with developing his or her theoretical view of change. At
the conclusion there is no neatly drawn theory of change. We do not
see that the current state of knowledge as represented in the litera-
ture supports such an endeavor. Nor is it clear that such a theory
could be constructed in the near future. Neither is the book a com-
prehensive statement about change. Although this first chapter pro-
vides a brief status report on the change literature, the principal
essays only sample certain domains of change. A casual reflection on
change should indicate that it encompasses almost all our concepts
in the organizational behavior literature. Think about leadership
motivation, organizational environment, and roles. It is impossible
to think about these and other concepts without inquiring about

change. Our strategy is not to be comprehensive but to focus on some central concepts or processes about change that may be generalizable over different topic areas.

We selected the book title because it focuses attention on change in organizations rather than solely on changing organizations. We are interested in change at the individual, group, organization, or organizational-environment interface, but not in particular organizations such as schools, businesses, or governments. Indeed, most of the essays are not specific to any type of organization.

The rationale for this venture is straightforward. First, we have already argued that the concept of change pervades all our intellectual endeavors. Second, the state of the literature does not provide some clear theoretical perspectives that might help us organize our thinking on change. Third, in the last eight to ten years there has been a proliferation of attempts to bring about large-scale system changes, and these activities are likely to continue.

We thus need to think about change and to change our thinking about change. It is hoped that readers will be sufficiently intrigued by the ideas presented in this volume to generate new perspectives on change.

This chapter sets the stage. First we present a brief status report on the literature on change in organizations. We discuss a way to think about the literature and highlight a set of themes. The chapter concludes with an introduction to the essays.

A Status Report

A brief review of the literature about change in organizations should prepare you for the major essays. Let us start with a definition of change. There are many meanings for the word: to make change, to put on fresh clothes, to shift (from one side to another), to exchange, to replace, to transfer, to transform. The meaning common to all these definitions is to make different. So in the context of change in organizations, the object of the change process—that is, what is to be made different—could be attitudes, beliefs and behaviors of individuals, interaction patterns of roles or groups, organizations, and so on. Change is the alteration of one state to another.

The source, type, or level of change is not, and should not be, part of the definition. The notion of change as making something different does not imply the source, type, or level of, that change. The source could be internal (to the individual) or external. The reason for keeping the definition general is that many people write about changing in organizations as planned change. Change, they imagine, comes about when an agent introduces techniques in some intentional manner to modify or alter the organization or its members or both. The view of change is limiting because it does not reflect that changes in an organizational context occur randomly, through evolutionary processes, via adaptation and other mechanisms. We want a general definition of change—change as making something different—and we want to focus that definition in an organizational context. Our attention may be on the individual, group, organization, or organizational-environmental interfaces.

Few people talk about the meanings of change (for an exception, see Zaltman and Duncan, 1977). Writers on change assume that we understand the concept, at least at some definitional level. That assumption may not be true and should be explored.

To review the vast area of change in organizations is a complicated task. We have therefore adopted a set of conventions in order to make some sense of the literature.

1. A method of organizing. We need to find some way to organize the literature. At the most general level we sorted the literature into planned organizational change and adaptation. Some initial sort was necessary for our own search and writing activities. At the same time we wanted the distinctions general enough to cast a broad net.

There are precedents for organizing literatures in such broad ways. In the economic and political science literatures are the metaphors of state as manager and state as reactor (Padgett, 1981). In the life sciences is a dichotomy between nature and nurture. In organization theory there is a debate over the significance of environmental forces as opposed to managerial action. Our method of organizing the change literature parallels this general distinction.

ical studies on change are not cumulative or of sufficient quality to provide some nice summary of what we know. Rather, our focus will be on the basic themes in the literatures on planned organizational change and adaptation. When possible, changes or new emphases on themes will be noted.

3. Time frame. Our review focuses mainly on materials published since 1977. Prior review pieces (Alderfer, 1976; Friedlander and Brown, 1974) were examined to provide continuity to our analysis.

Planned Organizational Change

A Review of Reviews. Friedlander and Brown (1974) provide a useful review of the organizational development literature through the 1973–74 period. Organizational development (OD) for these writers refers to a method for facilitating change and development in people, in technology, and in organizational processes and structure (Friedlander and Brown, p. 314). They focus primarily on technostructural approaches (job design, job enlargement, and so on) and human process approaches (survey feedback, group development, interventions). The value of the review is that Friedlander and Brown focus on a set of OD methods and provide the reader with a summary of the empirical knowledge about these methods. For example, they note that "human process approaches have a number of positive effects on attitudes. . . . There is little evidence, however, that organizational processes actually change or that performance or effectiveness is increased" (p. 334). They also identify two other emerging themes in the literature: what characterizes successful versus unsuccessful interventions and how multiple interventions of a total system are different from single interventions. At the time of the review there was only scattered evidence on these two themes. There is more attention given to these topics in the current literature (that published in the last five years).

Alderfer (1977) provides an update of the Friedlander-Brown review. His review is organized around trends in OD practice and OD research. In the area of practice, Alderfer indicates the following: (1) The practice of OD is no longer focused solely on business organizations—schools, governments, health organizations were

Planned organizational change refers to a set of activities and processes designed to change individuals, groups, and organization structure and processes. The key word is "planned." There is some a priori theory and methods that are brought to bear on some target (individual attitudes, organizational processes) in order to reach some goal (humanization of the work place, organizational efficiency). The term "organizational development" is often used instead of planned organizational change. Planned organizational change emphasizes managerial choice.

Adaptation concerns modification of an organization or its parts to fit or to be adjusted with its environment. Adaptive process may include "selecting environments, monitoring and predicting change . . . learning and buffering fluctuation in the flow of resources across organizational boundaries" (Hedberg, Nystrom, and Starbuck, 1976, p. 46). "Adaptational" emphasizes externally induced changes.

The distinction between planned organizational change and adaptation is arbitrary. The two concepts are not independent. Planned organizational change can increase adaptability, and adaptability can lead to planned organizational change.

Planned organizational change deals with the basis of change; adaptation deals with the conditions or sources of change. Planned organizational change focuses primarily on change within the organization, but the adaptation literature focuses primarily on populations of organizations and on organization-environment interfaces, and on changes within an organization that are environmentally dictated. The planned organizational literature emphasizes the process of actually creating change rather than writing about the processes of change (adaptation literature). The planned organizational change literature is devoted to methods and techniques, but the adaptation literature is devoted to theorizing about the change processes or outcomes.

2. Themes. The second convention for our review was to organize the literature by themes, that is, to highlight the basic issues and problems about change and how people think about them. Where appropriate, we will reference some of the empirical findings relevant to the basic themes. Unfortunately, the empir-

more involved in OD. (2) New types of survey feedback techniques and new structural approaches, such as the collateral organization, have emerged. (3) There is a greater focus on organizational-environmental interfaces. (Much of the literature in the Friedlander-Brown review focuses on within-organizational change.) (4) In terms of research, Alderfer sees more sophistication in the designs used to evaluate organizational interventions. Also, new instruments designed to capture some of the changing process and outcome variables have been developed. (5) Alderfer also notes the emergence of more sophisticated theories on change. Argyris and Schön (1978) and Alderfer (1976) illustrate some new theoretical developments occurring during this period.

White and Mitchell completed another review in 1976. Their strategy was first to develop a classification system for coding OD-type studies and then to analyze the literature following this system. They used three facets: (1) the recipient of change (individual, group). (2) the level of expected change (conceptual, structural), and (3) relationships involved in change (intrapersonal, interpersonal). Applying this facet scheme to the literature from 1964 to 1974, they report that most OD programs attempt to change attitudes or behavior of either the individual or his or her immediate subgroup and focus the change on factors concerning self-relationships or relationships to peers (White and Mitchell, 1976, p. 65). White and Mitchell also review the quality of OD research. Their basic findings are that most of it takes place in the field. Most of the changes are represented in percentages without statistical comparisons. The majority of data is collected from reports by participation of researchers who were committed to the success of the intervention.

This review of reviews is intended to give the reader a picture of the literature on planned organizational change in the early and mid 1970s. There are some obvious central themes—methods or techniques of change and empirical assessment of change. Other themes, such as the role of values in OD interventions, also appear. In the Alderfer (1976) review we get some feeling about movements in these themes. That is, methods become more elaborate. The target population moves to include nonbusiness organizations, and some greater sophistication on the level of theory and measurement is underway.

Five Major Current Themes. As noted, our review of planned organizational change focused mainly on the literature since 1977. We have tried to draw a fairly representative sample of journal articles and books. Although our search was not exhaustive, it includes enough materials to enable us to trace the major themes.

One major theme is *intervention methods.* Interest in thinking about organizational change in terms of intervention methods and strategies still persists. In one of the most significant review books in our field (Katz and Kahn, 1978), organizational change is discussed in terms of alternative approaches (methods) to change at different levels of analysis—individual, group, and organizational. We thought it would be interesting to review some good "textbooks" on organizational change (Beer, 1980; Huse, 1980) to see what people are learning about changes. Again, intervention methods represent the primary way to organize the current state of knowledge. *Common to all these accounts are concern with how to categorize methods and a discussion of method characteristics.* Also, a similar set of methods (or approaches)—counseling, survey feedback, sociotechnical—reappears in most of these discussions. Peters (1978) also examines methods of change, but differs by arguing that managers have a set of mundane tools that are proposed as alternatives to more traditional OD methods. The mundane tools are symbols, patterns, and settings that are part of the daily work activities. Peters examines how the manipulation of these daily activities as symbols can create change in organizations.

Within the focus on methods of change, we found a set of studies that reports on the effectiveness of these methods. Porras and Berg (1978) examine the impact of a set of OD methods that includes laboratory training, the managerial grid, and survey feedback. Their strategy was to review the literature from 1959 to 1975 and determine the impact of these approaches on outcome variables. They report that overall satisfaction changed 38 percent of the time, with greater changes appearing in satisfaction with the company, security, and pay than with the job itself. OD methods appear to affect both process variables (decision making) and outcome variables (performance).

When examining the effectiveness of different OD approaches, Porras and Berg indicate that focusing on process and on

outcome variables (rather than on one of them) may be more effective, but the differences they report across methods are probably not significantly different. In other findings they report that the number of interventions and the length of exposure are related to the degree of positive change. Although there are some interesting ideas in this paper, it is based on a review of studies that were not tightly controlled empirical investigations. Also, the authors use bivariate design to examine a multivariate problem. (For other studies in this area see Quinn, 1978.)

Another class of empirical studies examines the impact of a particular intervention method. In most cases we did not find a coherent set of good empirical studies that provides a cumulative body of knowledge about these intervention methods. We were more apt to find isolated studies.

Nadler, Mirvis, and Cammann (1976) examine the impact of an elaborate *survey feedback* system on the attitudes and performance of employees in branches of a bank. After describing the feedback system and its implementation, they report that the degree of involvement of the different branches in the use of survey feedback differently influenced the effects of that method on attitudes and performance. Employees in branches involved in a high use of feedback show more positive changes in some satisfaction and performance indicators, although the differences are small.

Rosen and Primps (1981) provide the best review of research concerning the effects of a *compressed workweek* (such as four days and forty hours). They identify a framework for tracing through the effect of compressed workweeks and then carefully examine fourteen studies. They report that attitudes toward the compressed workweek are favorable, with some generalizations to job attitudes (p. 61). The effect of the compressed workweek on performance is ambiguous. Schein (1969) examines the impact on productivity of a four-month flexible working-hour experiment on five production units. The results are mixed across the different groups, with no clear trend supporting evidence of a productivity increase. This finding is not surprising in that flextime programs will probably affect the decision to participate more than the decision to produce.

The literature on *job redesign* and worker attitudes has been more comprehensive and cumulative. Hackman and Oldham (1977)

have provided much of the direction. Many of the studies point to a positive relationship between increasing job variety, autonomy, and work satisfaction and involvement. Hackman, Pearce, and Wolfe (1978) examine the effect of changes in clerical jobs on employee attitudes and work behaviors. The results indicate that job changes affect general satisfaction, growth satisfaction, and internal motivation. Results on absenteeism and performance are less clear, but seem to be moderated by individual differences. The effects of individual differences on job design have been discussed by White (1978) and O'Connor, Rudolf, and Peters (1980). Other studies (Hackman and Frank, 1977; Hall and others, 1978) point to the complexities of achieving positive work outcomes from job redesign.

Walton (1977) and Goodman (1979) report on the introduction of *autonomous work groups* in two organizational settings. Both reports indicate that the initial impact of this intervention technology was to increase positive worker attitudes and performance. For example, Goodman (1979) reports on the introduction of autonomous work groups in coal mining crews. A longitudinal design indicates more positive attitudes about work and a slight positive increase in performance over a three-year period.

To summarize, first, cataloguing intervention methods is still a dominant way of thinking about planned change. Second, both in the empirical and nonempirical writings, there is a movement toward structural interventions and away from process interventions, such as laboratory training. Third, the empirical literature is still wanting. Friedlander and Brown (1974) provide a nice status report on what we know about certain methods. We tried to search the literature since 1977 to provide an update. Our rule was to focus on studies that had some reasonable empirical controls. In general we did not find a coherent, cumulative literature.

A second major theme is *large-scale multiple system interventions*. Here a combination of intervention methods is introduced, often on a total-system basis. Although the idea of multiple system interventions appears in some of our earlier reviews (Friedlander and, Brown, 1974), the emphasis has clearly changed since 1977. There is much more attention given to the introduction of coherent sets of intervention methods on a total-system basis.

The interest in quality of working life (QWL) probably has had the greatest influence on this theme or trend. Since the mid 1970s, there has been a series of large-scale experimental programs designed to increase QWL. These have occurred in union and non-union situations, in new plant and old plant situations, and in the private and public sectors. The strong interest in QWL provided a legitimating force for experimenting with new organizational forms. Although it is not within the scope of this chapter to detail QWL activities, a modal effort would have begun with some union management agreement to improve QWL. An outside consultant would have been hired. In a series of QWL projects, an independent evaluation team would have been put in place. Funding may or may not have come from government or foundation sources. The changes introduced would have included labor-management problem-solving groups, greater delegation of authority of work force, more communication channels between labor and management, new evaluation systems, job redesign, and new pay systems.

Although it is difficult to summarize the results of these projects, there seem to be positive effects on work attitudes, lower absenteeism, positive effects of safety, some mixed results on productivity (some improvements, some no change, none with declines), and positive effects on job skills (Goodman, 1979; Goodman and Lawler, 1977; Macy, Ledford, and Lawler, 1982; Macy and Nurick, 1982). There also has been a set of persistent problems across all these interventions. There has been fairly common reporting of increased stress for foremen and middle management, problems of managing individual differences, and problems in maintaining these interventions over time (Goodman and Lawler, 1977).

The focus on QWL change activities has not been limited to the organization as a unit of analysis. Community or labor-management area QWL programs have been initiated. The Jamestown area labor-management project is probably the best example. In these projects it would be common to find area labor-management committees concerned with the economic and QWL issues of the community and corollary labor-management committees at the firm level. The emergence of statewide QWL organizations (for example, in Michigan) illustrate an attempt to create change by diffusion. In a larger social unit, the state, as well as the

area organizations, provides a communication mechanism among those already possessing and those planning to initiate QWL activities. This linking of firm, area, and state into a common effort provides an important method for legitimation, diffusion, and maintaining change.

There were other large-scale multiple system interventions that did not emanate from the QWL tradition. One of the best documented is a study by Beyer and Trice (1978) on the introduction of EEO and alcoholism programs in government agencies. These researchers begin with a general framework of change built around (1) implementation process—diffusion, receptivity, and use; (2) actors—supervisors, facilitators, directors; and (3) constraints—community, union, and organizational structure. The empirical work then examines characteristics of the actors with respect to the processes. For example, supervisors who implemented the two policies were older, had longer length of service, were more receptive to change in general, and had greater familiarity with the policies (Beyer and Trice, 1978, p. 260). Directors who implemented both policies had higher job involvement, longer length of service, higher job status, and believed that performance was important for career advancement. Concerning constraints, Beyer and Trice (1978) discuss how the community and the role of the union also influence implementation. These results are only isolated findings from a complex network of relationships. We cite this book because it examines the introduction of two different but related policies using multiple intervention in a very complex system. The empirical documentation is good and the book deserves a close reading. There is a related and broader literature on large-scale implementation of social programs in public organizations (Scheirer, 1981; Williams and others, 1982).

To summarize, the idea of large-scale multiple system intervention has been an important trend in planned organizational change efforts. The idea of multiple interventions is not new, but the scale on which it has been implemented over the last five to eight years is new. This theme is important because (1) it represents a set of activities in which there is a strong emphasis on devising innovative forms of work organization, (2) it generated a set of well-documented analyses of planned organizational changes with

sufficient similarity to permit identification of uniformities as to strategies and results, and (3) it highlighted the role of linking firm, community, state, and national systems in diffusing and sustaining change.

A third major theme is *assessment of change.* One consequence of large-scale multiple system interventions has been a noticeable development in the technology for assessing planned organizational change. Since about 1976, there has been funding to develop technology for organizational assessment. Researchers at the Institute for Social Research and their associates have been prime movers in this development. Lawler, Nadler, and Cammann (1980), Seashore, Lawler, Mirvis, and Cammann (1982), and Goodman (1979) summarize this work.

A number of different types of output can be categorized from this research:

1. Models of assessment. There have been some more refined frameworks for assessment (Nadler and Tushman, 1980; Van de Ven and Morgan, 1980). There has also been more concern with sharpening our understanding of the concept of effectiveness in change efforts (Carnall, 1980; Goodman and Pennings, 1980). The Goodman-Pennings paper identifies some approaches for defining the domain of effectiveness, selecting constituencies, identifying boundaries, and identifying the appropriate time frames.

2. Instrumentation. New standardized measures have been developed to assess organizational instrumentation. The Michigan Organizational Assessment package is probably the most extensive. It contains a list that covers a wide range of traditional attitude items (for example, boss and work group) and a newer set of items to describe the organization (for example, technology and structure) and the union. This package could be used in a survey or interview format. Other instrument procedures have been developed for observing group behavior (Goodman and Conlon, 1982), networks (Tichy, Tuchman, and Fombrun, 1980), measuring job characteristics (Seashore, Lawler, Mirvis, and Cammann, 1982), organizational episodes (Seashore, Lawler, Mirvis, and Cammann, 1982), and so on.

3. Designs. The use of more complicated time series designs characterizes the current assessment work. Also, more attention has been given to the use of control groups to better estimate internal validity (Goodman, 1979). This is in contrast to the earlier empirical work on planned organizational change, which used single observations after the experimental change (White and Mitchell, 1976).

4. Analytical procedures. There has been increasing and *more sophisticated* use of analytical and statistical procedures. Much of the earlier work analyzed percentage changes without any statistical procedures (White and Mitchell, 1976). Now we find better model specification and testing in attitude areas (Goodman, 1979). Analytical and statistical models for assessing productivity are presented by Epple, Goodman, and Fidler (1982). Cost-benefit analysis procedures can be found in Macy and Mirvis (1976) and Goodman (1979).

5. Other. There are other evaluation issues that we have not enumerated. Golembiewski, Billingsley, and Yeager (1976) propose that there are three types of change—Alpha, Beta, and Gamma—and that different designs and methodologies fit these different types of changes. Alpha change, *for example, refers to* changes in degree within a state. Beta change is similar, except that measurement continuum associated with a state has been recalibrated. Gamma change refers to changes of the state. Some controversies about measuring change that have been raised by these distinctions are found in Lindell and Drexler (1979) and Golembiewski and Billingsley (1980).

A much different perspective on assessing organizational change is found in Staw (1977). He proposes some innovative ideas on how the assessment methods can become an integral part of the changing organization.

To summarize, the key idea in this theme is that a large set of evaluation technologies has been developed. Although we do not have a complete package, there are enough models, procedures, and methods to document most change processes.

A fourth major theme is *failure,* specifically, the documentation of failures of planned organizational change. Mirvis and Berg's

Failures in Organization Development and Change (1977) is a compilation of cases and essays. (Researchers mentioned in this paragraph are contributors to this work.) Some of the cases point to problems in initial entry that lead to failure. D. N. Berg reports that the perceived importance of the change effort, the degree to which the organization is loosely coupled, and the perceptions that the change agent supports one of the conflicting groups all bear on the success of change. R. Lewicki and C. Alderfer explore a change agent's entry problem in a situation of labor-management conflict and how this affects change. W. Crockett's chapter outlines the problems in introducing and maintaining the multiple intervention change program in the State Department. The role of sponsorship, conflicting values, and lack of commitment are critical issues in this change activity. L. Frank and R. Hackman examine the failure of a job enrichment program. Our intent is not to summarize each chapter of this book but rather to indicate that the book is a valuable resource for the examination of failures in organizational change. The reader can abstract from each case a list of factors that are related to failure.

Other published work on the lack of significant changes in planned organizational programs is available. Billings, Klimoski, and Breaugh (1977) examine the change in technology from batch to mass production in a hospital dietary department. The paper is very good both in theoretically identifying potential effects and in carefully analyzing the results using a time series design. An analysis of the major dependent variables, such as job importance, task variety, task interdependence, and closeness of supervision, did not support the hypothesized effects of technological change. One of the explanations for the lack of effects after the change was in place was that employees anticipated many of the changes before the new technology was introduced.

Hall and others (1978) examine the effect of top-down departmental and job change on employee behavior and attitude using a longitudinal design. They report that "contrary to the findings of a sizeable number of correlational studies, but in agreement with four other longitudinal studies, changes in job characteristics were not related to changes in perceived effort, performance, or satisfaction. Job changes were . . . related to job involvement" (p. 62).

Other findings indicate negative outcomes associated with departmental changes. For example, feelings of psychological success were lower in departments that initiated "positive" (job design) or "negative" changes (greater controls) than in departments that experienced no change. Hall and his associates attribute the departmental effects to their top-down (versus participatory) nature.

Walton's (1978) report on the famous Topeka pet food experiment is another example of research in this area. His historical analysis ends with that organizational change in decline. A number of factors explain the decline. There was an "absence of potent corrective devices, of a capacity for self-renewal" (p. 46). Some of the initial sponsors of the project had left the plant. No new challenges existed that might have stimulated renewal activities. A nearby plant went on line without many of the new work structures introduced in the original Topeka plant. Because of this failure to diffuse the new work structure to the new plant, a mechanism that might have legitimated and supported the activities in the original plant was lost. Other accounts of problems in introducing change can be found in Blumberg (1977) and Firestone (1977).

To summarize, the documentation of failures is an important theme in planned change. It focuses our attention on the problem of maintaining change and requires some sharpening of our theoretical understanding of change process. That is, it forces us to account in some theoretical way for failure to bring out planned organizational change.

A fifth major theme in the literature is the *level of theorizing.* We see three trends. The first is that general frameworks have always characterized the literature on change (Lewin, 1951; Schein, 1969). Current work on change continues this broad-systems theoretical orientation (Beer, 1980; Huse, 1980). Nadler (1981) proposes a congruence model of change organized around inputs, transformation processes, and outputs. Inputs are the environmental resources and history; transformation refers to the tasks, informal organization, and individual and formal organization components; and outputs can be at the individual, group, or organizational level. "Organizations will be most effective when their major *components* are congruent" (Nadler, 1981, p. 194). The problem of *implementing* change becomes one of managing the inputs, transformation, and

outputs in a way to maintain congruence. The main value of this and other general models of change is that they identify a broad set of variables that should be considered. The disadvantage of this type of theorizing is its imprecision. The critical variables are not identified. Functional relationships among variables are ignored. It is impossible to generate testable hypotheses.

A second trend is the development of propositional inventories. Hage (1980) divides change processes into evaluation, initiation, implementation, and routinization and then generates a list of propositions for each part of the process. For example, in the routinization subprocess, Hage (1980, pp. 227–228) offers hypotheses such as:

- The greater the consensus about the performance gap, the less the extent of conflict, and the extent of costs and the more the extent of benefits perceived, the more likely the decision to institutionalize the innovation.
- The greater the consensus about the performance gap, the greater the duration of the time span for experimentation.
- The greater the measurability of benefits and of costs, the greater the number of benefits and of costs perceived, and the more likely the decision to institutionalize the innovation.

Kochan and Dyer (1976) develop an inventory about organizational change in the context of union-management relations. This is an important piece because it attempts to develop a theoretically coherent inventory in an area where little work has been done. Their change propositions are organized around stimuli for union-management change, the decision to participate in a joint program, and maintaining a commitment over time. Some selected propositions for maintaining commitment include (Kochan and Dyer, 1976, p. 72):

- The less the union leaders are seen as being coopted into performing roles and indistinguishable from management, the more likely the union will be to continue its commitment to the program over time.
- The more the program is buffered from the strategic maneuvers of the formal contract negotiations process (that is, the distributive tactics of the union and manage-

ment organizations), the more likely the parties are to maintain their commitment to the program over time.
- The more union leaders continue to aggressively pursue their constituents' goals on distributive issues through the formal bargaining process, the more likely the union will be to continue its commitment to the joint program over time.

Walton's (1980, p. 279) chapter on establishing and maintaining high-commitment work systems is another example of thoughtful theoretical work on change. His propositions are organized around facilitating conditions in the prehistory period, effectiveness of work systems, the fit among structure technology and human resources, commitment generated by the structure, and meanings of incentives and maturation, adaptation, and survival. Some sample propositions from the maturation, adaptation, and survival area include:

- The greater the differences between the inventory of human resources at the time of forming the structure and the human resources required to support the work structure planned for steady-state conditions, the longer it will take for the work structure to mature. Relatively large differences can be the result of any of several factors: a planned structure that is highly organic, inherently difficult task technologies, low skill levels possessed by workers at the time they are hired, and predispositions to lower-level involvement.
- The more changes that occur in the character of the task technology during the period of formation, the longer the time required to establish a work structure.

Dunn and Swierczek (1977) examine a set of hypotheses or propositions generated by other researchers on change. These propositions range from whether change efforts in economic (versus noneconomic) organizations will be more successful to the role of internal versus external change agents in successfully introducing change. In reviewing the literature, the authors found support for propositions indicating the positive effect of collaboration and the participation in change and less support for propositions concerning organizational types, origin of the change agent, and so on. This study's value is in the enumeration of propositions, not in the em-

pirical findings. Like other studies we have reviewed (for example, Porras and Berg, 1978), it portrays aspects of change (such as origin change agents) and success in a bivariate fashion; the world, unfortunately, is multivariate.

Although it is difficult to sense any movement away from general frameworks of change to propositional inventory on change, we feel the inventory approach can be more productive in sharpening our thinking about change and in stimulating empirical research.

A third trend is elaborating a particular change process. There is a growing literature on implementation processes (Elmore, 1978; Scheirer, 1981; Williams and others, 1982). Many of the researchers in this domain come from a political science, policy, or educational administration tradition and focus on problems of implementation in public organizations. Scheirer (1981) provides a nice review of some of the empirical work in this area and then develops a set of propositions on how: macrolevel components (decision processes, control processes, and so on), intermediate processes (supervisory expectations, standard operating procedures, and so on), and individual variables (behavior skills, incentives, and cognitive processes) bear on the implementation of new programs.

Institutionalization, which concerns the persistence of change over time, is another process that has been examined recently. Levine (1980) examines the process of institutionalization of fourteen innovations in a university. Two major concepts are used in this analysis—compatibility and profitability. Compatibility is defined as the degree of congruence between the personality, norms, values, and goals of an innovation and its host. Profitability is defined as the degree to which an innovation satisfies the host's organizational, group, and personal needs.

Goodman, Conlon, and Bazerman (1978) provide another approach to institutionalization. They identify a two-stage model that underlies the process of institutionalization and, via literature review, relate factors such as rewards systems and commitment to the two-stage model. Other recent important pieces on institutionalization have been done by Zucker (1977), Meyer and Rowan (1978), and Kimberly (1979).

Walton (1977) initiated some of the earlier analyses of diffusion processes at the firm or company level. He examines several cases where diffusion failed and identifies a set of factors explaining the lack of diffusion. Some of these include confusion over what is to be diffused, inappropriateness of the concepts employed, and lack of top management commitment.

A much different approach to elaborating one of the processes in organizational change comes from the work of Biggart (1977). She analyzes the destructive processes in organizational change. Destruction includes any action that abolishes, discredits, suppresses, or otherwise renders useless an organizational structure (p. 410). The basic argument is that these destructive processes are a necessary part of the reorganizing activity. The empirical material for this analysis is derived from a major change in organization of the United States Post Office. The destructive processes include eliminating former ideologies, power alliances, and leadership in order to permit the development of new ones congruent with the new organizational structure.

To summarize, there are no clear trends in the theoretical elaboration of change. The tendency of the past literature to represent broad systems like flowcharts of change processes still persists. Although this approach has some heuristic value, it is not really a coherent theory about change and it probably impedes theoretical development. The work on propositional inventories or on conceptualizing one of the change processes seems more fruitful. These latter two approaches provide a more coherent set of concepts through which to understand change and improve our chances of developing and testing theories about change processes.

Adaptation

Adaptation concerns the modification of the organization or its components to fit or to be adjusted to its environment. In this section we follow the strategy of identifying the major themes in the current literature on organizational adaptation. We open with a brief review of reviews and then consider three themes on adaptation: the population ecology perspective, the organizational-environmental perspective, and adaptation within an organization.

A Review of Reviews. Organization theorists only recently began writing about the adaptation of organizations to their environments. The earliest piece that can be considered a review is Child (1972). His is an advocacy review. Although others have proposed that the environment, the technology, or the size of the organization dictate the structure or how the organization adapts, Child argues that the strategic choices made by decision makers in the dominant coalition are essential to understanding how organizations adapt to their environments. Specifically, Child argues that the dominant coalition has autonomy over many variables that enable organizations to adapt proactively, rather than merely to accommodate to uncontrollable changes. For example, organizations can choose which environment or market to operate in; they can manipulate and control their environment; they can choose technologies that grant them subsequent control; they can employ control systems to deal with their large size; and they may perceive and reevaluate their environments in ways that enable them to adapt creatively to contingencies.

Aldrich and Pfeffer (1976) review the organization literature that considers the relationship between organizations and environments. They consider two models, which they called the natural selection model and the resource dependence model. Both models allow for the importance of environmental influences on organizational decisions and structures. They differ in the emphasis placed on environmental selection and on managerial decision making.

The resource dependence perspective has also been called the political economy model and the dependence exchange model. This perspective portrays managers as making choices to adapt their organizations to their environments. It begins with the premise that all organizations must enter into transactions with certain elements of their environments, which creates an interdependence. In analyzing these interdependencies, this model fleshes out how and why decisions are made in organizations. Most decisions originate from interdependencies and transactions. Organizations are seen as active agents able to respond to, as well as change, their environments. Because many organizational configurations enable the organization to survive, strategic choices are recognized as central to the

understanding of organization-environment interfaces and changes in organizations.

The natural selection model is essentially a model of organizational evolution. It contrasts sharply with both Child's (1972) view of the world and the resource dependence model. The natural selection model applies to populations of organizations. In it the environment differentially selects organizations, basing its selection on the ability of the organization structure to exploit environmental resources. This model, in downplaying the importance of managerial decision making, primarily provides a post hoc or historical explanation for organizational change and adaptation. Adaptation takes on a different meaning in an evolutionary model. Campbell (1969) proposes a three-step evolutionary model that Aldrich and Pfeffer (1976) elaborate. First, variations in structure occur. From an evolutionary perspective, the source of these variations (random, borrowed, or created by decision makers) is irrelevant. People may adapt to an environment, but all they have done collectively is provide a pool of variations in the populations of organizations. In the second step, selection, the environment differentially selects one or some of these variations. Other organizations fail, which removes their variations from the pool. In the third step, retention, variations that were selected are retained. This model ascribes little importance to people's ability to adapt.

To summarize, these reviews span a continuum of the attributed importance of managerial decision making in the role of adaptation. Child (1972) anchors one end of the continuum—managers can and do strongly influence how their organizations adapt to the environment. The resource dependence model is more balanced in its viewpoint—managers can influence their environments and organizations, but there are real contingencies that must be adapted to. The natural selection perspective anchors the other end of this continuum—managers have little significant effect on the population of surviving (adapting) organizations.

Most of the important works on adaptation since Aldrich and Pfeffer's (1976) review have taken strong advocacy stands. Because they are not really reviews, we will consider them under their respective themes (Aldrich, 1979; Hannan and Freeman, 1977; Pfeffer and Salancik, 1978). We shall sample what is potentially a huge litera-

ture on adaptation. But that literature is without form, and there are few guides to it. We impose some form by proposing a list of themes, which fundamentally parallels the level of analysis of the authors' works. We discuss three themes: populations of organizations, adaptation at the level of the organization-environment interface, and adaptations within organizations.

Populations of Organizations. We consider the population ecology perspective and systematics in this section. Neither of these approaches to adaptation concedes much importance to strategic choices; indeed, these were written in part to provide alternatives to models of managerial choice. The population level perspectives share certain basic premises about adaptation. First, adaptation has meaning only when viewed in terms of a population of organizations being differentially selected by the environment—after the selection has occurred, we can say that *the organization was adapted.* Second, managerial choice is viewed as an unnecessary or misleading explanation for adaptation. It is considered more parsimonious to explain change and adaptation by examining when the organization was founded, what historical events occurred at key transition points, or how frequently changes in the environment occurred.

From the *population ecology perspective,* Hannan and Freeman (1977, p. 930) try to present an alternative to the dominant mode of modeling, which presumes that "subunits of the organization, usually managers or dominant coalitions, scan the relevant environment for opportunities and threats, formulate strategic responses, and adjust organizational structure appropriately." * Their alternative rests upon two broad issues: the appropriate unit of analysis for studying organizations and the general applicability of the population ecology to studying social organization. They are clear on both points. They argue explicitly for a focus on populations of organizations. We have therefore featured them in this section. They also argue that structural inertias so proscribe managerial choices that the study of social organization is fundamentally (it

*Hannan and Freeman (1977) introduced the phrase "adaptation perspective" to refer to models that stress managerial decision making. What we call "adaptation" is significantly more inclusive than what Hannan and Freeman refer to. Indeed, adaptation for us includes both the population ecology perspective and models of choice that Hannan and Freeman eschew.

cannot be reduced to a lower level of analysis) a study of population ecologies. At this level of analysis, we see an adaptation perspective that does not rely heavily on managerial choice. The following hypothesis, which represents a simplified version of Hannan and Freeman's argument, exemplifies the reification typical of this level of analysis and the lack of managerial choice. "Faced with unstable environments, organizations ought to develop a generalist structure that is not optimally adapted to any single environmental configuration but is optimal over the entire set of configurations. In other words, we ought to find specialized organizations in stable and certain environments and generalist organizations in unstable and uncertain environments" (Hannan and Freeman, 1977, p. 946).

Aldrich (1979) greatly elaborates the population ecology perspective by using the variation—selection—retention model of natural selection. His book integrates a huge array of literature in such a way that he presents the population ecology model as a powerful and researchable alternative to those models that draw primarily on managerial choice. Besides exploring the implications of this perspective on adaptation, he directly challenges Child's (1972) arguments on strategic choice. Specifically, Aldrich argues that there are severe constraints on managers' choices of new environments and on their abilities to influence their environments. Also, managers' perceptions of reality are so homogeneous as to make truly novel strategic choices improbable. These and other limits on managerial choice suggest that we must look elsewhere for explanations of the differential adaptation and survival of organizations.

A number of other researchers have empirically tested and extended the population ecology model or employed it in their modeling. Notable among them are Nielsen and Hannan (1977), Brittain and Freeman (1980), Carroll (1981), Aldrich and Fish (1981), Padgett (1981), and Rundall and McClain (1982).

McKelvey (1978; 1982) argues persuasively that *systematics,* which is the science of classification, is a prerequisite to understanding general organization functions and processes. That is, we cannot develop an understanding of how organizations adapt until we can discriminate among different kinds of organizations, trace the lineages of these organizational differences, and develop procedures to

identify and categorize organizational forms into classes. These three tasks are the three tasks of systematics—taxonomy, evolution, and classification. Of these, evolution bears most heavily on our understanding of adaptation and change.

McKelvey's (1982) exposition of the evolutionary perspective is axiomatic and propositional. We can convey how McKelvey views organizational change by paraphrasing a few of his succinct axioms and propositions. Environments of organizations change. Organizations respond to environmental forces. Thus, organizations respond or adapt to changing environments. This adaptation to changing environments accounts for the evolution of organizations—the differences and slow changes in structures, processes, and competencies over successive generations. The specific course of organizational evolution and change is ultimately determined by characteristics of environments. In essence, adaptation to a changing environment explains organizational differences and thus change and evolution. To understand change, study the differences of the environment.

To summarize, we have used three works to exemplify different population level approaches to adaptation and change. Hannan and Freeman's (1977) work is a relatively abstract piece that predicts the occurrence and change of structures based on changes in environmental niches. Aldrich's (1979) book greatly elaborates the three-stage natural selection model. Change derives from variations in organizational forms, one source of which is managerial choices, which are selected and retained. McKelvey (1982) presents an axiomatic model of evolution that explains change in terms of organizations adapting to changing environments. All these works aggregate organizations into populations; all of them downplay or eschew the importance of managerial choice; and all of them view the source of adaptation as an inconsequential artifact of evolution.

Organizations Interfacing with Environments. We turn now to a theme whose level of analysis is less aggregated than a population. The authors using this level of analysis focus on how organizations interface with environments. Specifically, we review works that share the theme that managers, in their attempts to adapt to their environments, make choices about their interactions with their environments. These choices, not the environment itself, are the most important explanation for change. This basic theme has been

approached several ways: through a resource dependence model, in terms of how strategy and structure affect adaptation, and phenomenologically. All these approaches share the explanation that adaptation and change come about through the accommodation of organizational decision makers to their environments.

Resource dependence model. Pfeffer and Salancik (1978) attempt to shift the focus of organizational research from a strictly internal perspective (that of focusing on managerial behavior) to an external one (that of focusing on the context of managerial behavior). This shift in focus is revealed in their approach to organizational change. There are two broadly defined contingent-adaptive responses—"the organization can adapt and change to fit environmental requirements, or the organization can attempt to alter the environment so that it fits the organization's capabilities" (Pfeffer and Salancik, 1978, p. 106). Their primary contribution to our thinking about change lies in their focus on the latter approach to change. They argue that organizations adapt their environments to them by such tactics as merging with other organizations, diversifying, co-opting important others through interlocking directorates, and engaging in political activities to influence matters such as regulation.

We will use the example of mergers to show how organizations change their environments in order to adapt better. We draw heavily on Pfeffer and Salancik (1978) and on Pfeffer (1972). Mergers, and growth in general, stabilize organization-environment relations. There are three types of mergers: vertical integration, horizontal expansion, and diversification. Each type helps manage a specific kind of interdependence. For example, vertical mergers manage symbiotic interdependence and horizontal mergers reduce competitive interdependence. Pfeffer and Salancik (1978, pp. 115-116) argue that "if organizations merge to control interdependence" rather than to increase profits or to achieve economies of scale, "then they should acquire organizations in areas in which they exchange resources." Pfeffer (1972) examines mergers between companies that manufacture different products and between petroleum producers and refiners. He interprets this finding as support for his hypothesis that organizations adapt by merging to absorb interdependence.

Change in Organizations

The resource dependence approach shares neither of the extreme explanations for adaptation, that is, that change is explained predominantly by the environment or predominantly by choices. Another balanced approach that relates organizational change to choices and the environment comes from the study of strategy and structure.

Strategy and structure. Many researchers have investigated how choices about strategy and structure enable organizations to adapt to environments. We have subdivided this group of research into those studies dealing primarily with strategy, with structure, or with their interaction. Strategy is a very general term denoting a general plan for meeting some objective. In this discussion, we will consider strategy and organizational structure as two components of strategy, that is, as tactics for achieving a strategic objective.

Several studies have addressed the ways choice of strategy enables organizations to adapt. Hall (1980) investigates how a turbulent and hostile environment (low growth, inflation, regulation, and competition) would affect the survival strategies used by top management. Using published data and field interviews, he found that success in eight major domestic industries depended upon achieving either the lowest cost or the greatest differentiation. Planning is another important part of strategies of change. Lindsay and Rue (1980) use a two-stage survey to explore how long-range planning processes are affected by the complexity and instability of the environment. Khandwalla's (1976) findings are similar to those of Lindsay and Rue (1980): Complex uncertain environments elicit comprehensive and elaborate planning strategies.

Kurke (1981) examines how strategies themselves change or persist over time. He uses a quasi-longitudinal laboratory design to test how uncertainty of the environment and frequency of the change in it affect the choice of and perpetuation of decision-making strategies. Kurke (1981) finds that the frequency of change and uncertainty interact to produce a tradition of change among decision makers. This tradition of change enables decision makers to adapt their organization quickly by rapidly changing their strategy.

Organizational structure is another component that people change in an effort to adapt to environmental changes. Most people

accept the idea that the environment somehow affects structure: Burns and Stalker (1961), Woodward (1965), and Lawrence and Lorsch (1967) convincingly demonstrate this relationship. Investigators have studied many different variables that may explain how and why the environment affects structure (DuBick, 1978; Marks, 1977; Segal, 1974). Explanations range from (Lincoln, Olson, and Hanada, 1978) how cultural presence (of Japanese in this example) affects functional specialization (it varies inversely) to how public bureaucracies respond to environmental changes (Meyer, 1979). Specifically, Meyer (1979, p. 205) finds that, "despite the openness and variability of bureaucratic structures, there is also evidence that organizational change does not occur as rapidly as do shifts in the environment. As a result, the fit between organizations and environments is greatest at the time of formation and declines gradually thereafter until reorganization or replacement of existing units becomes necessary. Structure, which is initially an accommodation to the environment, eventually becomes an impediment to change and must be altered fundamentally." In these and other examples, various facets of the environment are found strongly to influence structure.

While most discussions focus on one or the other, some writers, whose work we review in this section, explicitly combine strategy and structure, usually typologically. Miles and Snow (1978; Miles, Snow, Meyer, and Coleman, 1978) propose an adaptive cycle model of the adaptive process, using a strategic-choice perspective. In this model, managers had three problems to resolve. The problems were entrepreneurial, engineering, and administrative. In solving them, managers became one of four kinds of strategists: defenders, analyzers, prospectors, and reactors. Defenders create stability (solution to the entrepreneurial problem), produce and distribute goods as efficiently as possible (solution to the engineering problem), and tightly control the organization to ensure efficiency (solution to the administrative problem). Prospectors actively locate and develop new opportunities with engineering and administrative solutions supportive of this entrepreneurial thrust. The analyzer strategy is a combination of these two. The reactor strategy, as the name implies, is a strategy of failure—an inconsistent and unstable set of solutions to the three problems. These authors argue that if the

predominant market orientation or strategy is known, there will be a particular structure predictably associated with it. Each combination of strategy and structure, except the reactor, is the ideal form of adaptation.

Snow and Hrebiniak (1980) elaborate upon this work by showing that managers perceive themselves to have distinctive competence that enables them to adapt their organization effectively. "Specifically, the Defender's strong emphasis on manufacturing efficiency typically resulted in an organization that showed strengths in general management, production, applied engineering, and financial management. At the other extreme, the Prospector's emphasis on product and market effectiveness developed an organization whose distinctive competencies lay in general management, product research and development, market research, and basic engineerings." Exploiting distinctive competence is an effective adaptive tactic.

Miller and Friesen (1980a) propose another typology to categorize the various forms, or archetypes, that organizations use during periods of change or adaptation. They argue (Miller and Friesen, 1980b) that, in general, organizations are usually sluggish in adapting to environmental changes; there is tremendous "momentum" built into organizational structures that precludes rapid change. However, the authors find that when organizations do change, there are "revolutionary" reversals in many structural variables simultaneously. Although organizations normally are resistant to change due to momentum, when they do change and adapt, they change in a revolutionary rather than an evolutionary fashion. The archetypes they propose are the most typical configurations found during these revolutionary transitions. For instance, the archetype called consolidation "is usually triggered by a perceived need to retrench and consolidate. For example, the firm may have diversified too quickly and into some unprofitable areas, or resources may have been taxed due to overexpansion. The decline in profits and the sense that the firm is out of control cause the realization that some sort of change is necessary" (Miller and Friesen, 1980a, p. 282). These strategic archetypes do not necessarily imply improved adaptation—they may be dysfunctional.

Phenomenological approaches. Several conceptual articles appeared recently that begin to explain, from a more phenomenological perspective, why structures appear, endure, and change. Most of the authors of these articles draw upon Weick's (1979) work on enactment. Like the explanation for enactment, phenomenological explanations for change rely on introspection, description, and interpretation to understand how social actors construct their lifeworlds and come to share them as if they were real. Change and adaptation, for phenomenologists, would be effected by altering actors' constructed realities (Meyer and Rowan, 1978; Zucker, 1977). We will review two representative pieces.

Ranson, Hinings, and Greenwood (1980) propose an integrative framework—a unified theoretical and methodological framework—that draws on three abstract conceptual categories. The first, provinces of meaning, embodies an interpretive scheme for organizational members that enables them to understand their worlds as meaningful and that provides values for implementing structures. The second, dependencies of power, enables different factions to resolve their alternative interpretive schemes and value preferences. The third category is contextual constraints. These constraints are "inherent in characteristics of the organization and the environment, with organizational members differentially responding to and enacting their contextual conditions according to the opportunities provided by infrastructure and time" (Ranson, Hinings, and Greenwood, 1980, p. 4). Their framework would imply that organizational change comes about by changing members' provinces of meaning, the dependencies of power, or the contextual constraints.

Pfeffer (1981) argues that managers have two basic tasks: to manage interdependencies (a notion that we reviewed under the resource dependence model) and to manage on the symbolic level, internal to the organization. For Pfeffer (1981, p. 1) the symbolic level is where "the use of political language and symbolic action serves to legitimate and rationalize organizational decisions and policies. Organizations are viewed as systems of shared meanings and beliefs, in which a critical administrative activity involves the construction and maintenance of belief systems which assume continued compliance, commitment and positive affect on the part of

participants." Management creates and maintains these "paradigms" through language, symbolism, and ritual. In Pfeffer's symbolic world, change and adaptation would come about by managers applying different languages, rituals, and so on to modify participants' shared meanings. How managers enact the environment will strongly affect how well they are able to adapt their organizations. Peters (1978), reviewed previously, gives us the best cookbook approach on how to modify paradigms that would permit managers to adapt.

To summarize, the resource dependence model, studies of strategy and structure, and phenomenological approaches to changes are parts of a theme that relates organizational adaptation to both the environments and to managerial choices. The studies portrayed in this theme represent a diverse set of approaches, methods, and styles of theorizing. This diversity is a healthy development from the 1960s and early 1970s in the study of organizational change.

Adaptation Within Organizations. Research that focuses on adaptation within an organization is the least aggregated and most compatible with a strategic choice perspective. Authors of this research take environmental change or perturbation for granted—and concentrate on the adaptations that go on inside the organization.

Our search for papers on change reaffirmed our belief that innovation can be an important component of organizational changes. However, we have not attempted thoroughly to review the innovation literature. We might have included innovation under planned organizational change, and indeed we have previously cited innovation references. However, we have included several studies on innovation here because innovation fits well, because innovations may not be planned, and because not all planned changes are innovative. Furthermore, the works included here help us understand adaptation ex post, whereas the works included under planned organizational change help us ex ante.

There have been many approaches to innovation. They range from the study of personality attributes of people who are or are not innovative, to methods for measuring perceptions of innovation, to studies of different phases of innovation.

Kirton (1980) continues to develop and elaborate his theory of adaptation and innovation. He "posits that individuals have charac-

teristically different styles of creativity, problem solving, and decision making. In brief, adaptors tend to operate cognitively within the confines of the appropriately conceptually accepted paradigm . . . within which a problem (novel stimulus) is generally initially perceived. Innovators, by contrast, are more liable to treat (formally or intuitively) the enveloping paradigm as part of the problem" (Kirton, 1980, pp. 213-214). He predicts how the proportions of adaptors and innovators will vary by organizational structure. Presumably, the proportion of innovators will affect how quickly organizations can adapt.

Siegel and Kaemmerer (1978) have tried to measure how organizational members perceive innovation in their organization. They propose that five dimensions would be characteristic of innovative organizations: the kind of leadership, the feeling of ownership of ideas, norms for diversity, continuous development or experimentation with alternative conceptions, and consistency. They then develop a scale, test it, and refine it. From their five dimensions, they find that one major factor (support for creativity) and two lesser factors (diversity and ownership) are reliable indicators of the perceptions of innovativeness in traditional and alternative schools. This work suggests that support for creativity may be crucial to the adaptability of organizations.

The remainder of the authors we will review here write about specific stages or phases (such as conception, proposal, adoption, and implementation) of innovation.

Daft (1978), in an attempt to understand the source of innovation, examines its proposal stage. In his study of school systems, his basic finding is that teachers are the main source of technical innovations, but principals and superintendents provide most administrative innovations. This finding was influenced by the degree of professionalism (for example, highly professional teachers propose more innovations than less professional teachers; the less the professionalism of the teachers, though, the more administrators propose technical innovations). Size has little or no effect. He proposes a dual-core model of innovation that accounts for the innovations originating both with leaders and with lower-level employees. That is, innovations come both top-down and bottom-up.

Change in Organizations

Dickson (1976) concentrates on the adoption phase (rather than on the proposal phase). His concern is with why or when people will adopt an innovative proposal that is variably probable of achieving an outcome, that has an expected value, and that has a range of variance of that value. Using this expected value approach, he derives a simple model and tests it. Rewards and penalties are independent variables and influence decision makers' choices. Expectancy dominates these choices.

Kimberly and Evanisko (1981) studied the effects of individual, organizational, and contextual variables on medical and managerial innovations. Their basic findings are that all three sets of variables affect both medical and managerial innovations, but that organizational variables have a much larger influence on innovations, especially medical innovations. Moch (1976) also has studied how organizational factors—specifically, structural attributes—affect the adoption of innovation. His data show that increases in size, specialization, functional differentiation, and decentralization all increase the adoption of innovations.

Self-design, or designing into the organization a flexibility that facilitates continuous redesign, is another approach to change in organizations. Transient structures, an ideology of change, and an ability to redesign structure repeatedly and regularly are characteristics of self-designing organizations. Two papers represent this approach.

Hedberg, Nystrom, and Starbuck (1976) argue that organizational environments are not static, placid, and benign. They change, They change, present turmoil, and become nasty. To design organizations that can adapt to these environments requires unorthodox thinking and prescriptions. We will review two prescriptions of the many they propose. First, they suggest that designing organizations should be more like erecting tents than palaces. "An organizational tent places greater emphasis on flexibility, creativity, immediacy, and initiative than on authority, clarity, decisiveness, or responsiveness" (Hedberg, Nystrom, and Starbuck, 1976, p. 45). Second, they prescribe that adapting through self-design means that one must "unlearn yesterday. . . . The first step toward new behaviors is unlearning old behaviors. The effectiveness of existing activity programs and traditional strategies is disconfirmed, and the process binding the organi-

zation to today's behavioral patterns are disengaged" (p. 51). By erecting tents and unlearning yesterday, the organization will achieve a state of ongoing self-design that will permit it to survive the more turbulent times.

Weick (1977) takes a similar approach to self-design. He considers the strike by the Skylab 3 crew an example of a problem in self-design and of the need to be able to alter design as the organization evolves. He characterizes organizations that are incapable of self-design, including Skylab, as follows: "They value forecasts more than improvisation, they dwell on constraints rather than opportunities, they borrow solutions rather than invent them, they defend past actions rather than devise new ones, they cultivate permanence rather than impermanence, they value serenity more highly than argument, they rely on accounting systems as their sole means to assess performance rather than use more diverse measures, they reassess performance rather than encourage it, they search for final solutions rather than continuously experimenting, and they discourage contradictions rather than seek them" (Weick, 1977, p. 37). That list implies how Weick would construct organizations so that they are ongoing self-designers and therefore remain adaptable.

Ambiguity and choice constitute yet another focus for researchers looking at adaptation within organizations. March and Olsen's (1976) work on ambiguity and choice has had a significant impact on organizational theory and hence on perspectives on change. They argue that choice situations are extremely complex and ambiguous. During the choice process, activities besides making choices are introduced; for example, standard operating procedures are executed, truth is defined, history is interpreted, glory and blame are distributed, self-interests are discovered, and people enjoy themselves. These complexities and the ambiguities of intention, understanding, history, and organization together place severe limitations on the complete rational cycle of choice; each connection in the cycle of choice is at times severed by the extreme ambiguity present in organizational settings.

Having set forth a very different set of assumptions, March and Olsen (1976) provide a major departure from the organization and change literatures. They propose a number of alternative theories, formulations, and observations. For example, they propose

that we view organizations as garbage cans (Cohen, March, and Olsen, 1972) wherein streams of problems, solutions, participants, and choice opportunities intermingle. A fortuitous confluence of these streams may indeed produce a "decision," but the production is not the certain, unambiguous, and rational process portrayed in the organizational literature. Decisions to adapt or to change an organization are subject to major properties of the garbage can decision process. One of these properties is that, although "important problems are more likely to be *solved* than unimportant ones . . . important choices are much *less* likely to resolve problems than are unimportant ones. Important choices are made by oversight and flight." Furthermore, "the few choice failures that do occur are concentrated among the most important and least important choices" (March and Olsen, 1976, p. 37). There are several implications of their findings. Assuming a problem in adaptation is important, it will probably be solved, though it may not be. If it is solved, it will probably be solved by oversight (ignoring the choice) or flight (escaping the choice). This model of choice is extremely different from rational models.

Another formulation of March and his associates is that of an organized anarchy. Without reviewing them in detail, we refer the reader to the two key works on organized anarchies: Cohen and March (1974), who studied college presidents, and Sproull, Weiner, and Wolf (1978), who studied the formation and early development of the National Institute of Education. In both of these settings, the key impediment to change is that the members' preferences are often problematic, the technology is unclear, and participation is fluid. Organized anarchies are very loosely coupled (Weick, 1976), which makes the management of change a problematic enterprise.

March (1981) directs his attention and perspective specifically toward organizational change. He argues that basic organizational processes are stable—they derive from the mundane, day-to-day activities of managers and leaders; they slowly adapt the organization; and they may involve the interplay of rationality and foolishness. March (1981, pp. 574-575) argues that:

These stable processes of change, however, produce a great variety of action and their outcomes are sometimes sur-

prisingly sensitive to the details of the context in which they occur.

A view of change as resulting from stable processes realized in a highly contextual and sometimes confusing world emphasizes the idea that *things happen in organizations* because most of the time organizational participants respond in elementary ways to the environment, including that part of the environment that might be called management or leadership. Managers and leaders propose changes, including foolish ones; they try to cope with the environment and to control it; they respond to other members of the organization; they issue orders and manipulate incentives. Since they play conventional roles, organizational leaders are not likely to behave in strikingly unusual ways. And if a leader tries to march toward *strange destinations, an organization is* likely to deflect the effort. Simply to describe leadership as conventional and constrained by organizational realities, however, is to risk misunderstanding its importance. Neither success nor change requires dramatic action. The conventional, routine activities that produce most organizational change require ordinary people to do ordinary things in a competent way.

Social movements in organizations can constitute an important source of change. Zald and Berger (1978) describe organizational coups, bureaucratic insurgency, and mass movements as three types of social movements that enable organizations to adapt through major changes in top managers, in goals, or in linkages to external elements, to name just a few dimensions of their discussion.

To summarize, at the level of aggregation corresponding to our theme of change within individual organizations, we see an acceptance of strategic choice and managerial decision making as influencing adaptation. Choices are inherent in the adaptive activity, whether of innovation, self-design, social movement, or ambiguity. As this section has demonstrated, there is considerable latitude in theorizing about how choices affect adaptation and change.

Plan and Organization of the Book

The purpose of the status report is to give the reader a sketch of the basic themes in the current literature on change. Although the

division we make between planned change and adaptation is arbitrary, is useful for cataloguing the literature.

The chapters on change that follow build from this review of the literature. They are intended to provide the conceptual apparatus for understanding change. The topics are not comprehensive in the sense that they take off from all the themes we have identified. Some do—such as the Lawler, Cole, and Goodman and Dean chapters, which follow in the tradition of planned organizational change. Cole and Goodman and Dean extend our conceptualization of diffusion and institutionalization processes. Other chapters, such as those of Staw and Weick, can be placed in the adaptation literature. Still others, such as Smith's encounter with some epistemological issues of change, cut across both planned organizational change and adaptation. The strategy in selecting the contributors was to identify provocative researchers rather than to cover all the contemporary issues on change.

To assist the reader in moving through this book, a brief discussion of each chapter follows.

In Chapter Two, Argyris builds on his earlier theoretical work on single- and double-loop learning. Particular consideration is given to problems both individuals and organizations have in double-loop learning. The focus is on change at the individual level. Argyris argues that change at this level must precede changes at other levels of analysis. Some ideas for moving toward double-loop learning are examined.

Staw, in Chapter Three, examines change as a potential mechanism for organizational adaptation. His approach is to examine counterforces to change. That is, by examining why it is difficult for organizations to change or to adapt, one can learn more about the process of change. Escalation and commitment are two counterforces to change that are examined in detail and models describing these processes are presented. These models are thoughtful and extend previous work. The analysis is primarily at the individual level, but extensions to the organization are also discussed.

Chapter Four, by Alderfer, focuses on the group level of analysis, particularly on intergroup theory and how it bears on changing race relations. The chapter is different from the other chapters in

style and form. It concludes with a set of propositions for changing white men's attitudes and beliefs about race relations.

Chapter Five, by Cole, provides an interesting analysis of one process of change—diffusion. His comparative analysis takes the reader to Japan, Sweden, and the United States to explore why organizations in these countries have differentially adopted participative structures. His examination generates a set of institutional, structural, and strategic factors that affect diffusion of new forms of work organizations.

Goodman and Dean, in Chapter Six, focus on another process of change—institutionalization. The chapter develops a framework for explaining the persistence of change, an operational procedure for representing institutionalization, and some data relevant to the framework. This chapter focuses on the organizational levels and draws from the planned organizational change perspective.

Lawler (Chapter Seven) presents a framework for developing high-involvement work systems. Motivation, individual performance capability, and communication coordination and control are the three critical elements in his framework. The chapter outlines organizational design features that affect these three elements. The congruence of the design features is central to enhancing organizational effectiveness. The focus of analysis in this chapter is on changing the organization and its structure.

Smith (Chapter Eight) argues that we are not ready to develop a theory of change or to advance our conceptualization of change until we tackle some unresolved epistemological problems latent in most discussions of change. He organizes his analysis around issues: metaphor and metonymy, the boundary "not" condition, sense making of collectivities, and morphostasis and morphogenesis. Although this is probably the most abstract of the chapters, Smith tries to root these themes into a common organizational example with the other papers in this book and to "hint" for change.

In Chapter Nine, Weick examines the meaning of change in the context of loosely coupled systems. He begins with a detailed description of loosely coupled systems, contrasts change in this type of system versus a rational system, and then explores targets for change in a loosely coupled system. The chapter is provocative.

The final chapter, by Kahn, is integrative in nature; it builds from discussion about the chapters and from Kahn's own views. This concluding chapter is not meant to be comprehensive. Rather, it attempts to identify critical themes on change in organizations.

References

Alderfer, C. P. "Change Processes in Organizations." In M. D. Dunnette (Ed.), *Handbook of Industrial and Organizational Psychology*. Chicago: Rand McNally, 1976.

Alderfer, C. P. "Organization Development." *Annual Review of Psychology*, 1977, 28, 197-223.

Aldrich, H. E. *Organizations and Environments*. Englewood Cliffs, N.J.: Prentice-Hall, 1979.

Aldrich, H. E., and Fish, D. "Origins of Organizational Forms: Births, Deaths, and Transformations." Working paper, Dept. of Sociology, Cornell University, 1981.

Aldrich, H. E., and Pfeffer, J. "Environments of Organizations." *Annual Review of Sociology*, 1976, 2, 79-105.

Argyris, C., and Schön, D. A. *Organizational Learning: A Theory of Action Perspective*. Reading, Mass.: Addison-Wesley, 1978.

Beer, M. *Organization Change and Development*. Santa Monica, Calif.: Goodyear, 1980.

Beyer, J. M., and Trice, H. M. *Implementing Change*. New York: Macmillan, 1978.

Biggart, N. W. "The Creative-Destructive Process of Organizational Change: The Case of the Post Office." *Administrative Science Quarterly*, 1977, 22(3), 410-426.

Billings, R. S., Klimoski, R. J., and Breaugh, J. A. "The Impact of a Change in Technology on Job Characteristics: A Quasi-Experiment." *Administrative Science Quarterly*, 1977, 22, 318-339.

Blumberg, A. "A Complex Problem—An Overly Simple Diagnosis." *The Journal of Applied Behavioral Science*, 1977, 13, 184-191.

Brittain, J. W., and Freeman, J. H. "Organizational Proliferation and Density." In J. R. Kimberly, R. H. Miles, and Associates, *The Organizational Life Cycle: Issues in the Creation, Transforma-*

tion, and Decline of Organizations. San Francisco: Jossey-Bass, 1980.

Burns, T., and Stalker, G. M. *The Management of Innovation*. London: Tavistock, 1961.

Campbell, D. T. "Variation and Selective Retention in Socio-Cultural Evolution." *General Systems*, 1969, 16, 69-85.

Carroll, C. A. "The Evaluation of Work Organization Change." *Human Relations*, 1980, 33, 885-916.

Carroll, G. R. "Dynamics of Organizational Expansion in National Systems of Education." *American Sociological Review*, 1981, 46, 585-599.

Child, J. "Organizational Structure, Environment, and Performance: The Role of Strategic Choice." *Sociology*, 1972, 6, 1-22.

Cohen, M. D., and March, J. G. *Leadership and Ambiguity: The American College President*. New York: McGraw-Hill, 1974.

Cohen, M. D., March, J. G., and Olsen, J. P. "A Garbage Can Model of Organizational Choice." *Administrative Science Quarterly*, 1972, 17, 1-25.

Daft, R. L. "A Dual-Core Model of Organizational Innovation." *Academy of Management Journal*, 1978, 21, 193-210.

Dickson, J. W. "The Adoption of Innovative Proposals as Risky Choice: A Model and Some Results." *Academy of Management Journal*, 1976, 19, 291-303.

DuBick, M. A. "The Organizational Structure of Newspapers in Relation to Their Metropolitan Environments." *Administrative Science Quarterly*, 1978, 23, 418-433.

Dunn, W. N., and Swierczek, F. W. "Planned Organizational Change: Toward Grounded Theory." *Journal of Applied Behavioral Science*, 1977, 13(2), 135-157.

Elmore, R. F. "Organizational Models of Social Program Implementation." *Public Policy*, 1978, 26, 185-228.

Epple, D., Goodman, P. S., and Fidler, E. "Assessing the Economic Consequences of Organizational Change." In S. Seashore and others (Eds.), *Assessing Organizational Change: A Guide to Methods, Measures and Practices*. New York: Wiley-Interscience, 1982.

Firestone, W. A. "Participation and Influence in the Planning of Educational Change." *Journal of Applied Behavioral Science*, 1977, 13, 167-183.

Change in Organizations

Friedlander, F., and Brown, L. D. "Organization Development." *Annual Review of Psychology*, 1974, *25*, 313–341.

Golembiewski, R. T., and Billingsley, K. "Measuring Change in OD Panel Designs: A Response to Critics." *Academy of Management Review*, 1980, *5*, 97–103.

Golembiewski, R. T., Billingsley, K., and Yeager, S. "Measuring Change and Persistence in Human Affairs: Types of Change Generated by OD Designs." *Journal of Applied Behavioral Science*, 1976, *12*, 133–157.

Goodman, P. S. *Assessing Organizational Change: The Rushton Quality of Work Experiment.* New York: Wiley-Interscience, 1979.

Goodman, P. S., and Conlon, E. "Observation of Meetings." In S. Seashore, E. Lawler, P. Mirvis, and C. Cammann (Eds.), *Assessing Organizational Change: A Guide to Methods, Measures and Practices.* New York: Wiley-Interscience, 1982.

Goodman, P. S., Conlon, E., and Bazerman, M. "Institutionalization of Planned Organizational Change." In B. M. Staw and L. L. Cummings (Eds.), *Research in Organizational Behavior.* Vol. 2. Greenwich, Conn.: JAI Press, 1978.

Goodman, P. S., and Lawler, E. E. "New Forms of Work Organization in the United States." Monograph prepared for the International Labor Organization, Geneva, Switzerland, 1977.

Goodman, P. S., and Pennings, J. "Critical Issues in Assessing Organizational Effectiveness." In E. Lawler, D. Nadler, and C. Cammann (Eds.), *Organizational Behavior and the Quality of Working Life.* New York: Wiley-Interscience, 1980.

Hackman, J., and Frank, L. "A Failure of Job Enrichment: The Case of the Change that Wasn't." In P. H. Mirvis and D. N. Berg (Eds.), *Failures in Organization: Development and Change.* New York: Wiley-Interscience, 1977.

Hackman, J., and Oldham, G. R. "Motivation Through the Design of Work: Test of a Theory." *Organizational Behavior and Human Performance*, 1977, *16*(2), 250–279.

Hackman, J., Pearce, J. L., and Wolfe, J. C. "Effects of Changes in Job Characteristics on Work Attitudes and Behaviors: A Naturally Occurring Quasi-Experiment." *Organizational Behavior and Human Performance*, 1978, *21*, 289–304.

Hage, J. *Theories of Organizations: Form, Process, and Transfor-*

Hall, D. T., and others. "Effects of Top-Down Departmental and Job Change Upon Perceived Employee Behavior and Attitudes: A Natural Field Experiment." *Journal of Applied Psychology*, 1978, *63*, 62–72.

Hall, W. K. "Survival Strategies in a Hostile Environment." *Harvard Business Review*, 1980, *58*, 75–85.

Hannan, M. T., and Freeman, J. "The Population Ecology of Organizations." *American Journal of Sociology*, 1977, *82*, 929–965.

Hedberg, B. L., Nystrom, P. C., and Starbuck, W. H. "Camping on Seesaws: Prescription for a Self-Designing Organization." *Administrative Science Quarterly*, 1976, *21*, 41–65.

Huse, E. F. *Organization Development and Change.* St. Paul, Minn.: West, 1980.

Katz, D., and Kahn, R. L. *The Social Psychology of Organizations.* (2nd ed.) New York: Wiley-Interscience, 1978.

Khandwalla, P. N. "The Techno-Economic Ecology of Corporate Strategy." *Journal of Management Studies*, 1976, *13*, 62–75.

Kimberly, J. R. "Issues in the Creation of Organizations: Initiation, Innovation and Institutionalization." *Academy of Management Journal*, 1979, *22*, 437–457.

Kimberly, J. R., and Evanisko, M. J. "Organizational Innovation: The Influence of Individual Organizational and Contextual Factors on Hospital Adoption of Technological and Administrative Innovations." *Academy of Management Journal*, 1981, *24*, 689–713.

Kirton, M. "Adaptors and Innovators in Organizations." *Human Relations*, 1980, *33*, 213–224.

Kochan, T. A., and Dyer, L. "A Model of Organizational Change in the Context of Union-Management Relations." *Journal of Applied Behavioral Science*, 1976, *12*, 59–78.

Kuhn, T. S. *The Structure of Scientific Revolutions.* (2nd ed.) Chicago: University of Chicago Press, 1980.

Kurke, L. B. "Adaptability in Organizations: The Role of Environmental Change and Uncertainty in the Perpetuation of Decision Making Strategies." Unpublished doctoral dissertation, Graduate School of Business and Public Administration, Cornell University, 1981.

Lawler, E. E. III, Nadler, D. A., and Cammann, C. *Organizational*

Lawrence, P. R., and Lorsch, J. W. *Organization and Environment.* Homewood, Ill.: Irwin, 1967.

Levine, A. *Why Innovation Fails.* Albany: State University of New York Press, 1980.

Lewin, K. *Field Theory in Social Science.* (D. Cartwright, Ed.) New York: Harper & Row, 1951.

Lincoln, J. R., Olson, J., and Hanada, M. "Cultural Effects on Organizational Structure: The Case of Japanese Firms in the United States." *American Sociological Review,* 1978, 43, 829–847.

Lindell, M. K., and Drexler, J. A., Jr. "Issues in Using Survey Methods for Measuring Organizational Change." *Academy of Management Review,* 1979, 4(1), 13–19.

Lindsay, W. M., and Rue, L. W. "Impact of the Organization Environment on the Long-Range Planning Process: A Contingency View." *Academy of Management Journal,* 1980, 23, 385–404.

McKelvey, W. "Organizational Systematics: Taxonomic Lessons from Biology." *Management Science,* 1978, 24, 1428–1440.

McKelvey, W. *Organizational Systematics: Taxonomy, Evolution, Classification.* Berkeley: University of California Press, 1982.

Mary, B. A., Ledford, G. E., and Lawler, E. E. III. *An Assessment of the Bolivar Quality of Work Experiment: 1972-1979.* New York: Wiley-Interscience, 1982.

Mary, B. A., and Mirvis, P. H. "A Methodology for Assessment of Quality of Work Life and Organizational Effectiveness in Behavioral-Economic Terms." *Administrative Science Quarterly,* 1976, 21(2), 212–226.

Mary, B. A., and Nurick, A. J. *Assessing Organization Change and Participation: The TVA Quality of Work Experiment.* New York: Wiley-Interscience, 1982.

March, J. G. "Footnotes to Organizational Change." *Administrative Science Quarterly,* 1981, 26, 563–577.

March, J. G., and Olsen, J. P. *Ambiguity and Choice in Organizations.* Bergen, Norway: Universitetsforlaget, 1976.

Marks, M. "Organizational Adjustment to Uncertainty." *Journal of Management Studies,* 1977, 14, 1–15.

Meyer, J. W., and Rowan, B. "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology,* 1978, 83, 340–363.

Meyer, M. W. *Change in Public Bureaucracies.* Cambridge, Mass.: Harvard University Press, 1979.

Miles, R. E., and Snow, C. C. *Organizational Strategy, Structure, and Process.* New York: McGraw-Hill, 1978.

Miles, R. E., Snow, C. C., Meyer, A. O., and Coleman, H. J., Jr. "Organizational Strategy, Structure, and Process." *Academy of Management Review,* 1978, 3, 546–562.

Miller, D., and Friesen, P. H. "Archetypes of Organizational Transition." *Administrative Science Quarterly,* 1980a, 25, 268–299.

Miller, D., and Friesen, P. H. "Momentum and Revolution in Organizational Adaptation." *Academy of Management Journal,* 1980b, 23, 591–694.

Mirvis, P. H., and Berg, D. N. (Eds.). *Failures in Organization Development and Change.* New York: Wiley-Interscience, 1977.

Moch, M. K. "Structure and Organizational Resource Allocation." *Administrative Science Quarterly,* 1976, 21, 661–674.

Nadler, D. A. "Managing Organizational Change: An Integrative Perspective." *Journal of Applied Behavioral Science,* 1981, 17, 191–211.

Nadler, D. A., Mirvis, P., and Cammann, C. "The Ongoing Feedback System—Experimenting with a New Managerial Tool." *Organizational Dynamics,* 1976, 4, 63–80.

Nadler, D. A., and Tushman, M. L. "A Model for Diagnosing Organizational Behavior." *Organizational Dynamics,* 1980, 9, 35–51.

Nielsen, F., and Hannan, M. T. "The Expansion of National Education Systems: Tests of a Population Ecology Model." *American Sociological Review,* 1977, 42, 479–490.

O'Connor, E. J., Rudolf, C. J., and Peters, L. H. "Individual Differences and Job Design Reconsidered: Where Do We Go From Here?" *Academy of Management Review,* 1980, 5, 249–254.

Padgett, J. F. "Hierarchy and Ecological Control in Federal Budgetary Decision Making." *American Journal of Sociology,* 1981, 87, 75–129.

Peters, T. J. "Symbols, Patterns, and Settings: An Optimistic Case for Getting Things Done." *Organizational Dynamics,* 1978, 7, 3–23.

Pfeffer, J. "Merger as a Response to Organizational Interdependence." *Administrative Science Quarterly,* 1972, 17, 382–394.

Change in Organizations

Pfeffer, J. "Management as Symbolic Action: The Creation and Maintenance of Organizational Paradigms." In L. L. Cummings and B. M. Staw (Eds.), *Research in Organizational Behavior.* Vol. 3. Greenwich, Conn.: JAI Press, 1981.

Pfeffer, J., and Salancik, G. R. *The External Control of Organizations: A Resource Dependence Perspective.* New York: Harper & Row, 1978.

Porras, J. I., and Berg, P. O. "The Impact of Organization Development." *Academy of Management Review,* 1978, 3, 249–266.

Quinn, R. E. "Towards a Theory of Changing: A Means-Ends Model of the Organizational Improvement Process." *Human Relations,* 1978, 31, 395–416.

Ranson, S., Hinings, B., and Greenwood, R. "The Structure of Organizational Structures." *Administrative Science Quarterly,* 1980, 25, 1–17.

Ronen, S., and Primps, S. B. "The Compressed Work Week as Organizational Change: Behavioral and Attitudinal Outcomes." *Academy of Management Review,* 1981, 6, 61–74.

Rundall, T. G., and McClain, J. O. "Environmental Selection and Physician Supply." *American Journal of Sociology,* 1982, 87, 1090–1112.

Schein, E. H. "The Mechanisms of Change." In W. Bennis, K. Benne, and R. Chin (Eds.), *The Planning of Change.* (2nd ed.) New York: Holt, Rinehart and Winston, 1969.

Scheirer, M. A. *Program Implementation: The Organizational Context.* Contemporary Evaluation Series, edited by H. E. Freeman and R. A. Berg. Vol. 5. Beverly Hills, Calif.: Sage, 1981.

Seashore, S., Lawler, E., Mirvis, P., and Cammann, C. (Eds.) *Assessing Organizational Change: A Guide to Methods, Measures and Practices.* New York: Wiley-Interscience, 1982.

Segal, M. "Organization and Environment: A Typology of Adaptability and Structure." *Public Administration Review,* 1974, 34, 212–220.

Siegel, S. M., and Kaemmerer, W. F. "Measuring the Perceived Support for Innovation in Organizations." *Journal of Applied Psychology,* 1978, 63, 553–562.

Snow, C. C., and Hrebiniak, L. G. "Strategy, Distinctive Competence, and Organizational Performance." *Administrative Science Quarterly,* 1980, 25, 317–336.

Sproull, L., Weiner, S., and Wolf, D. *Organizing an Anarchy: Belief, Bureaucracy, and Politics in the National Institute of Education.* Chicago: University of Chicago Press, 1978.

Staw, B. M. "The Experimenting Organization." *Organizational Dynamics,* 1977, 6, 3–18.

Tichy, N. M., Tushman, M. L., and Fombrun, C. "Network Analysis in Organizations." In E. E. Lawler, D. A. Nadler, and C. Cammann (Eds.), *Organizational Assessment.* New York: Wiley-Interscience, 1980.

Van de Ven, A. H., and Morgan, M. A. "A Revised Framework for Organizational Assessment." In E. E. Lawler, D. A. Nadler, and C. Cammann (Eds.), *Organizational Assessment.* New York: Wiley-Interscience, 1980.

Walton, R. "The Diffusion of New Work Structures: Explaining Why Success Didn't Take." In P. H. Mirvis and D. N. Berg (Eds.), *Failures in Organization Development and Change.* New York: Wiley-Interscience, 1977.

Walton, R. "Teaching an Old Dog Food New Tricks." *Wharton Magazine,* Winter 1978, pp. 38–46.

Walton, R. "Establishing and Maintaining High Commitment Work Systems." In J. R. Kimberly, R. H. Miles, and Associates, *The Organizational Life Cycle: Issues in the Creation, Transformation, and Decline of Organizations.* San Francisco: Jossey-Bass, 1980.

Weick, K. E. "Educational Organizations as Loosely-Coupled Systems." *Administrative Science Quarterly,* 1976, 21, 1–19.

Weick, K. E. "Organization Design: Organizations as Self-Designing Systems." *Organizational Dynamics,* 1977, 6, 31–46.

Weick, K. E. *The Social Psychology of Organizing.* (2nd ed.) Reading, Mass.: Addison-Wesley, 1979.

White, J. K. "Individual Differences and the Job Quality-Worker Response Relationship: Review, Integration, and Comments." *Academy of Management Review,* 1978, 2, 267–280.

White, S. E., and Mitchell, T. R. "Organization Development: A Review of Research Content and Research Design." *Academy of Management Review,* 1976, 1(2), 57–73.

Williams, W., and others. *Studying Implementation.* (A. Wildavsky, Ed.) Chatham, N.J.: Chatham House, 1982.

Woodward, J. *Industrial Organization: Theory and Practice.* Oxford: Oxford University Press, 1965.

Zald, M., and Berger, M. "Social Movements in Organizations: Coup d'etat, Insurgency, and Mass Movements." *American Journal of Sociology,* 1978, 83, 823–861.

Zaltman, G., and Duncan, R. *Strategies for Planned Change.* New York: Wiley-Interscience, 1977.

Zucker, L. G. "The Role of Institutionalization in Cultural Persistence." *American Sociological Review,* 1977, 42, 726–743.